

Work Order ID 150331

Wednesday, August 24, 2016 11:42:30 AM

150331

Page 1

Item ID: D2857-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Hinge Bracket

Start Date: 8/24/2016 Start Qty: 14.00

14

Cust Item ID:

Required Date: 8/24/2016 Req'd Qty: 14.00

14

Customer:

Reference:

Approvals: Process Plan: **DAS 21** Date: **AUG 26 2016** Tooling:

Date:

Run Start

NR1QC: **9-89** Date: SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2857	Rev C								

100

100

BAND SAW

0.00

Bandsaw

Memo

0.19

Jeaspa Bandsaw

Cut blanks 4.425"

14 1 16-10-8

110

110

HAAS CNC VERTICAL MACHINING #1

0.02

HAAS 1

Memo

0.47

HAAS CNC vertical machine #1

1-Machine per folio FA940
FOLIO REV: C
DWG REV: C
2-Deburr any rough edges14 1 DAS 44 9-89 16-10-13
PTO →

120

120

QC2- Inspect parts off machine FAI/FAIB

0.00

QC

Memo

0.02

Quality Control

14 1 DAS 44 9-89 16-10-13

DQA:

Date: Jan 4 2017



QA Closed:

Date:

DEC 12 2016 WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

Work Order: <u>150 331</u>		DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Part No. <u>D 2857-1</u>		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐
NCR No. <u>16-6148</u>		Scrap ☒		Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☒	Quality ☐
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
		Suspected Unapproved ☐		Large Fab ☐	Composite ☐	Supplier ☐	
Date: <u>16-10-13</u>		Step #: <u>16</u>		QTY Effective: <u>①</u>		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition				DAS 9 9-89 16-10-13 Completed By DAS 44 9-89 16-10-14 Lead hand / Supervisor Approval Verification DAS 08 9-89 16-10-14 QC / QA Coordinator DAS 9 9-89 16-10-13	
cutter crash into part. EC. faulty program		review program / folio and add any necessary correction Scrap part qty ①. Replaced B 134 058					
Root Cause		FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	☒ Folio/Program	Outside Dimensions ☐		
Doc/Data ☒	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐						
Misidentified ☐	Past Due ☐	OTHER :					

Work Order ID 150331***150331***

Page 2

Wednesday, August 24, 2016 11:42:31 AM

Item ID: D2857-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Hinge Bracket

Start Date: 8/24/2016 Start Qty: 14.00

14

Cust Item ID:

Required Date: 8/24/2016 Req'd Qty: 14.00

14

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00							
130						14	φ		DAS 49
QC	Memo	0.05							9-89
Quality Control									16/10/14
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140						(x14)	φ		26/10/17
HandFinish	Memo	0.05							323.
Hand Finishing									
160	White Gloss (Ref: 4.3.5.1) per QSI005 4.3-Alum	0.00							
160						14	φ	16-10-17.	DAS 34
Powdercoat	Memo	0.02							9-89
Powder Coating	START TIME: 3:25								
	OVEN TEMPERATURE: 320°								
	FINISH TIME: 3:55								

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Wednesday, August 24, 2016 11:42:31 AM

Page 3

Stop *NR2*

14 _____ DAS
38
9-89
OCT 18 2016

14 _____ DAS
6
9-89
OCT 20 2016

16/10/2016

16-10-20

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
320 2				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Wednesday, August 24, 2016 11:42:30 AM

Page 1

Work Order ID: 150331

150331

Parent Item: D2857-1

D2857-1

Parent Item Name: Hinge Bracket

Start Date: 8/24/2016

Required Date: 8/24/2016

Start Qty: 14.00

Required Qty: 14.00

Comments: IPP C00.06.22Removed P/O for powder coatEC
IPP D06.05.01Added level 8 EC IPP Rev:E
10.06.10 remove seq150 DD verf:JLM IPP Rev:F 11.01.06 as
per dwg revC DD verf:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B2.000X01.25 0		Purchased	No			100	f	15.1670	0.37	5.452632			

M6061T6B2 000X01 250

216-10-9

6061-T6 Bar 2.00 x 1.25

Location	Loc Qty	Loc Code
MAT	0.667	
m134191	0.667	
MAT003	14.5	
xm134058	2.5	
m134377	12	

.373

F.K 16/10/13

135559

5.3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

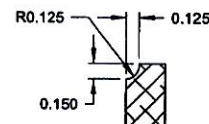
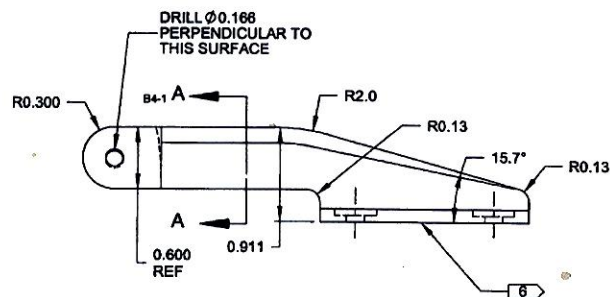
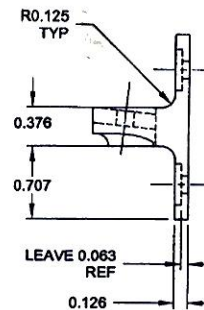
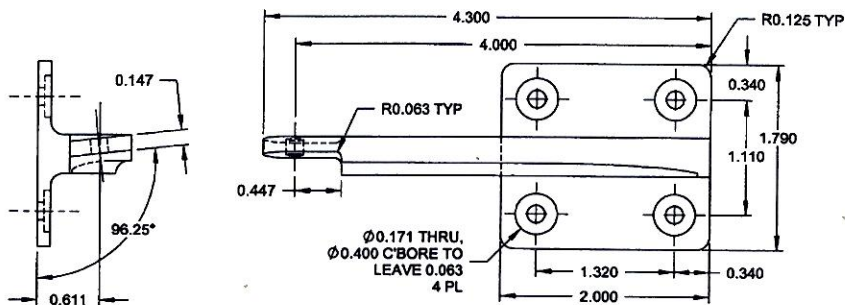
DART AEROSPACE LTD		Work Order:	150331
Description: Hinge Bracket		Part Number:	D2857-1
Inspection Dwg: D2857 Rev: C		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
4.300	+/-0.010	4.301	/		Venn	FK-01
4.000	+/-0.010	4.000	/			
0.340	+/-0.010	.340	/			
1.110	+/-0.005	1.110	/			
1.790	+/-0.010	1.791	/			
1.320	+/-0.005	1.320	/			
2.000	+/-0.010	2.001	/			
0.340	+/-0.010	.340	/			
0.447	+/-0.010	.447	/			
Ø0.171	+0.005/-0.000	.171	/			
0.147	+/-0.010	.147	/			
0.376	+/-0.010	.378	/			
0.126	+/-0.010	.121	/			
0.063	+/-0.010	.058	/			
Ø0.166	+0.005/-0.000	.167	/			
0.911	+/-0.010	.907	/			
0.600	+/-0.010	.595	/			
0.125	+/-0.010	.125	/			
0.150	+/-0.010	.150	/			

Measured by:	DAS 44 9-89	Audited by:	DAS 49 9-89	Preliminary Approval:	
Date:	16-10-14	Date:	16/10/14	Date:	

Rev	Date	Change	Revised by	Approved
A	04.06.15	New Issue	KJ/JLM	
B	07.04.20	Dimensions update per Dwg Rev B	KJ/JLM	
C	12.05.14	Dwg Rev updated	KJ	



B7-1 SECTION A-A

D2857-1 HINGE BRACKET

NOTES:

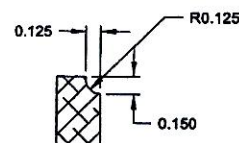
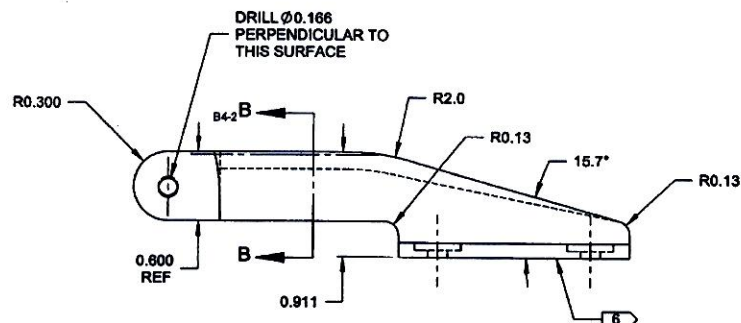
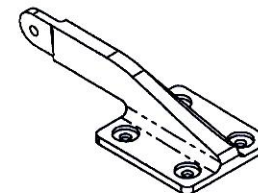
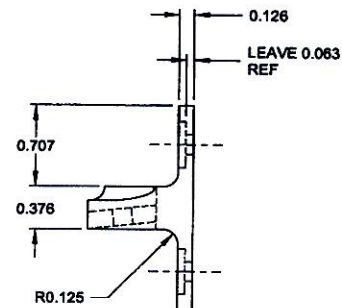
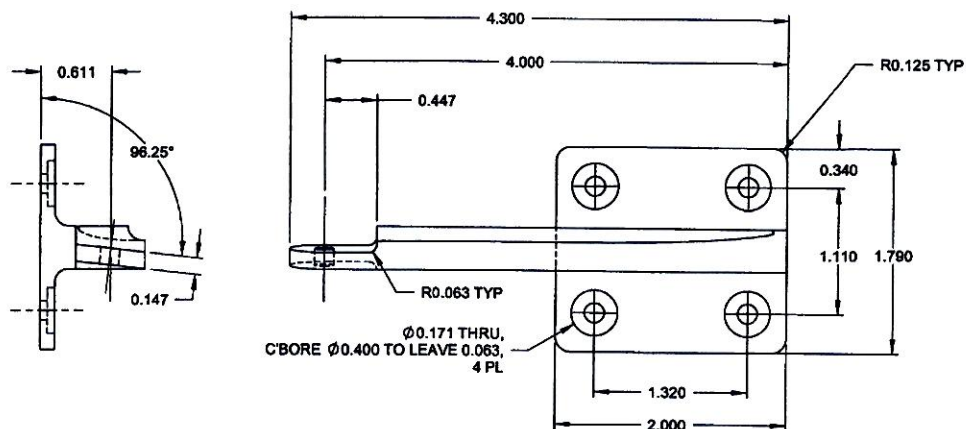
- 1) MATERIAL: 6061-T6 ALUMINUM BAR PER QQ-A-200/8 OR QQ-A-225/8 OR ASTM B211 OR ASTM B221 REF DART SPEC M6081T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: P/N "D2857-1" PER DART QSI 044 6.1 (FINE POINT PERMANENT INK MARKER)
- 7) WEIGHT: 0.11 lbs

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 150331 M-5
16-08-26

RELEASED
2010-11-26

C	REFORMAT DWG. IDENTIFICATION BY MARKER WAS ENGRAVING (A8-1). REF PAR 10-040	CP	10.08.13
B	ADD THICKNESS, REDRAW W/ SOLIDWORKS	LE	06.08.28
A	NEW ISSUE	KE	06.12.14
REV.	DESCRIPTION	BY	DATE
DESIGN	KE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DP		
CHECKED	DP	DRAWING NO.	REV. C
MFG. APPR.	DP	D2857	SHEET 1 OF 2
APPROVED	DP	TITLE	SCALE
DE APPR.	DP	HINGE BRACKET	NTS
DATE	10.09.13	COPYRIGHT © 1998 BY DART AEROSPACE LTD THIS DOCUMENT IS PRELIMINARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	



SECTION B-B

D2857-2 HINGE BRACKET

NOTES:

- 1) MATERIAL: 6061-T6 ALUMINUM BAR PER QQ-A-200/8 OR QQ-A-225/8 OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: P/N "D2857-2" PER DART QSI 044 6.1(FINE POINT PERMANENT INK MARKER)
- 7) WEIGHT: 0.11 lbs

DESIGN	KE	DART AEROSPACE LTD	
DRAWN	99	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D2857	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		HINGE BRACKET	NTS
DATE	10.09.13	COPYRIGHT © 1998 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

RELEASED
2010-11-26